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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Atty Docket No.: A01304  
AECM:sd

In re Application of: Navin B. SHAH et al. Confirmation No. 9809

Serial No. 10/615,685 Group Art Unit: 1712

Filed: July 09, 2003 Examiner: Toscano, A.

For: **LOW TEMPERATURE CURING COATING POWDERS FOR  
MAKING SMOOTH, FLEXIBLE POWDER COATINGS**

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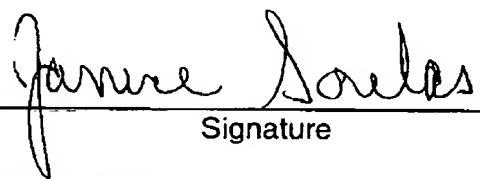
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF APPEALS AND INTERFERENCES

AMENDED APPEAL BRIEF

In re the Application of  
Navin B. SHAH et al.

Filed on July 09, 2003

Serial No. 10/615,685

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**AMENDED APPEAL BRIEF UNDER 37 CFR § 41.37(c)**

Responsive to the Notice of Non-Compliant Appeal Brief, mailed March 29, 2007, this is an amended brief on appeal from the final rejection dated September 07, 2006 finally rejecting instant claims 1-2 and 4-6. The pending claims 1-2 and 4-10 are set out in the Appendix.

**(1) Real Party In Interest**

The owner of the instant application and the invention contained therein is ROHM AND HAAS COMPANY.

**(2) Related Appeals and Interferences**

No appeals or interferences are known to Appellants', Appellants' legal representative, or the assignee which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal. Accordingly no "Related Decisions" are attached hereto.

### (3) Status Of Claims

The status of the claims is as follows:

Claims pending	-	1-2, 4-10
Allowed claims	-	none
Claims objected to	-	none
Claims rejected	-	1-2, 4-6
Claims on appeal	-	1-2, 4-10
Claims withdrawn by Examiner	-	7-10

### (4) Status Of Amendments After-Final Rejection

A "Request For Reconsideration After-Final Rejection And Request For Rejoinder" responsive to the Final Rejection dated September 07, 2006, and not containing an amendment, was filed on October 19, 2006 by facsimile; and, no amendment was entered on the record.

### (5) Summary Of Claimed Subject Matter

As recited in instant claims 1 and 6, the present invention relates to coating powder compositions comprising a polyester resin, a semi-crystalline polyester resin, an epoxy-functional curing agent, such as triglycidyl isocyanurate, and a catalyst, such as tetraethyl phosphonium tetrafluoroborate. See, for example, the instant specification at page 3, lines 6-10, at page 8, lines 10-13, and at page 13, line 16, at Table 1, 4<sup>th</sup> row from bottom. The polyester resin of instant claims 1 and 6 comprises 75 to 90 weight parts of an amorphous carboxylic acid functional polyester and 10 to 25 weight parts of a semi-crystalline polyester, wherein the semicrystalline resin is formed from a polyol and a polycarboxylic acid such that 10 to 50 weight parts per 100 weight parts of the total of total polycarboxylic acid used to form the semi-crystalline polyester is an asymmetrically substituted aromatic polyacid or derivative thereof, including ester, acid halide, anhydride, or a mixture thereof. See, for example, the instant specification at page 3, lines 11-19, and page 7, lines 9-14. Suitable catalysts may be used in an amount of from 0.1 to 5 parts per hundred weight parts of

total resin. See, for example, the instant specification at page 9, lines 4-12. The semi-crystalline polyester resin can provide the coating powder with a total cure time of 5 to 20 minutes over a wide range of temperatures. See, for example, the instant specification at page 2, line 24 to page 3, line 1, at page 16, lines 7-10, and at page 18, lines 19-20.

#### **(6) Grounds of Rejection to be Reviewed on Appeal**

The following grounds of rejection are present for review on appeal:

- A. Whether instant claims 1 and 4 are obvious under 35 USC section 103(a) over O'Keefe et al., U.S. Patent no. 6,184,311 B1 (O'Keefe) in view of Decker et al., U.S. Patent no. 6,025,030 (Decker), both of record.
- B. Whether instant claim 2 is obvious under 35 USC §103(a) over O'Keefe in view of Decker, and further in view of Ahjopalo et al., in Polymer 41 (2000) 8283-8290 (Ahjopalo), all of record.
- C. Whether instant claims 5 and 6 are obvious under 35 USC §103(a) over O'Keefe in view of Decker and further in view of Daly et al., U.S. Patent No., 6,294,610 B1 (Daly), all of record.

#### **(7) Argument**

- A. Regarding the rejection of instant claims 1 and 4 under 35 USC section 103(a) as being obvious over O'Keefe in view of Decker.
  - i) Each of O'Keefe and Decker fails to disclose the same features of invention instantly recited, and so even their combination cannot render the instant claims obvious

The rejections admit that O'Keefe fails to disclose a semi-crystalline polyester resin formed from a polyol and a polycarboxylic acid such that 10 to 50 phr of the total weight the polycarboxylic acid used to form the semi-crystalline polyester is an asymmetrically substituted aromatic polyacid, ester, acid halide, anhydride, or a mixture thereof, as is instantly recited.

Decker fails to disclose a composition comprising a polyester binder. See the Abstract of Decker, lines 1-20, especially lines 1-7. Further, Decker fails to disclose powder compositions comprising a semi-crystalline polyester, as

instantly recited. See Decker at the Abstract, lines 1-20, especially lines 7-15, col. 2, lines 28-32, column 7, lines 15-24, 32-38 and 58-67 (Tables 2, 3 and 4).

Given the foregoing, even the combination of O'Keefe and Decker fails to provide powder compositions comprising a semi-crystalline polyester made from an asymmetrically substituted aromatic polyacid, ester, acid halide, anhydride, or a mixture thereof, as is instantly recited.

It is well settled that all features of the instant claims must be taught or suggested in the art. In re Royka, 490 F.2d 981 (CCPA 1974).

As both of O'Keefe and Decker, even taken in combination, fails to teach every feature of the instant claims, the obviousness rejection over the combination of O'Keefe and Decker is improper and should be withdrawn.

ii) The purported combination of O'Keefe and Decker is improper because there is no motivation to make a semi-crystalline polyester intermediate in Decker and put it in a powder composition and, in fact, Decker teaches away from the use of semi-crystalline polyesters in powder compositions

Decker teaches only powder compositions comprising adducts of a curing agent with semi-crystalline polyester (to make adduct (B). The position taken in the rejection errs in attempting to use Decker to teach semi-crystalline polyesters in powder compositions. Nothing in Decker suggests the desirability of stopping the formation of the adduct of Decker to make a powder composition. See Decker at Abstract, lines 7-15, col. 1, line 64 to col. 2, line 9, and col. 3, lines 47-53 and col. 7, lines 15-26 (Table 2, Example 2 fails impact resistance). To the contrary, Decker states that use of semi-crystalline polyesters in powder compositions lead to sintering problems without improving impact resistance and flexibility. See Decker at col. 1, lines 43-49. Because there is no motivation in Decker to stop at the intermediate molecule of Decker and combine that intermediate molecule with O'Keefe, the art Decker may not properly be combined with O'Keefe. In re Lalu, 747 F.2d 703 (Fed. Cir. 1984).

A more thorough analysis of the cited art leads to the same conclusion: O'Keefe and Decker cannot be combined in the manner suggested by the rejection. Decker suggests only the use of semi-crystalline polyesters as

intermediates for adducts and discloses that such intermediates themselves in powder compositions lead to sintering and give undesirable impact resistance; Decker thus suggests not to make the instantly recited semi-crystalline polyester containing powder composition. See col. 1, lines 42-49 of Decker. Further, each of Decker and O'Keefe fails to provide any guidance as to how to make a powder composition comprising a semi-crystalline polyester made from an asymmetrically substituted aromatic polyacid, ester, acid halide, anhydride, or a mixture thereof. It is well settled that, even if all the elements of an invention are found in a combination of prior art references, a proper analysis under §103 requires, *inter alia*, consideration of two factors: (1) whether the prior art would have suggested to those of ordinary skill in the art that they should make the claimed product or carry out the claimed process; and (2) whether the prior art would also have revealed that in so making or carrying out, those of ordinary skill would have a reasonable expectation of success. Velander v. Garner, 348 F.3d 1359, 1363 (Fed. Cir. 2003) (citing Graham v. John Deere Co., 383 U.S. 1, 17, 86 S. Ct. 684, 15 L. Ed. 2d 545 (1966)). The first requirement, the motivation to combine references, serves to prevent hindsight bias. See McGinley v. Franklin Sports, Inc., 262 F.3d 1339, 1351 (Fed. Cir. 2001). Clearly, then one looking at Decker would think they should not make the instantly recited composition; moreover, one looking at Decker would not reasonably expect to succeed in making useful powder compositions using semi-crystalline polyester intermediates. Decker cannot properly be combined with O'Keefe. Accordingly, one could only have derived the teachings of the instant claims is from the instant specification and not from the art cited in the rejection.

In the same vein, Decker teaches away from the combination purported by the rejection. It is well settled that when a piece of prior art "suggests that the line of development flowing from the reference's disclosure is unlikely to be productive of the result sought by the appellant" the piece of prior art is said to "teach away" from the claimed invention. In re Gurley, 27 F.3d 551, 553 (Fed. Cir. 1994). Looking at all the facts, if the art contains "apparently conflicting" teachings (i.e., where some passages teach the combination and others teach

away from it) each passage must be considered "for its power to suggest solutions to an artisan of ordinary skill considering the degree to which one reference might accurately discredit another." *In re Young*, 927 F.2d 588, 591 (Fed. Cir. 1991). In the instant case, Decker unequivocally rejects the use of semi-crystalline polyesters themselves in powder compositions because including such a semi-crystalline polyester in the composition of Decker would provide compositions having sintering problems and that provide coatings with inadequate impact resistance, i.e. that are unsatisfactory for their intended purpose. *In re Gordon* (Fed. Cir. 1984). See Decker at column 1, lines 42-49, at column 2, lines 49-54 and at col. 7, lines 15-26 (Table 2, Example 2 fails impact resistance). Accordingly, Decker teaches away from the combination with O'Keefe proffered by the rejection.

The rejections over O'Keefe in view of Decker are improper and should be withdrawn. Because the composition of instant claims 1-2 and 4-6 is allowable and because the method of using the composition of instant claims 7-10 incorporate all of the features of claim 1 therein, Appellants request rejoinder of all of instant claims 1-2 and 4-10. It is well settled that a composition and a method of using the same composition. See *In re Ochiai*, 37 USPQ2d 1127 (Fed Cir. 1995). Accordingly, Office practice dictates that rejoinder of Groups I and II is proper in this case. See MPEP 8.21.04, 1<sup>st</sup> and 2<sup>nd</sup> paragraphs.

B. Regarding the rejection of instant claims 2 under 35 USC section 103(a) as being obvious over O'Keefe in view of Decker and further in view of Ahjopalo.

Ahjopalo provides no expectation of success in making polyester powders for any suitable purpose and fails to overcome the deficiencies of O'Keefe or of O'Keefe in view of Decker

In addition to the shortcomings of O'Keefe, mentioned above, the rejection admits that O'Keefe fails to disclose non-blooming polyesters, instantly recited in claim 2.

The rejection incorrectly attempts to use Ahjopalo to show that it would have been obvious to include a non-blooming polyester in O'Keefe. The art of

Ahjopalo fails to actually disclose or suggest any powder composition. See, for example, the "Abstract", page 8283, "Experimental, 2.1 Polymerization" at page 8284, and at page 8290, right hand col., 1<sup>st</sup> paragraph. The migration observed in Ahjopalo takes place in a bulk polyester, not in a powder. In fact, Ahjopalo fails to provide any guidance as to whether and, if so, how the polyesters made therein are used in powder compositions; and no guidance as to how to address the sintering and impact resistance problems referenced in Decker. Accordingly, one would not have expected to successfully make powders non-blooming polyesters in view of Ahjopalo. While the law requires some reasonable expectation of success in a combination made to show a claimed thing as obvious, no such expectation results from the instantly alleged combination of O'Keefe with Decker and Ahjopalo. See Velander, supra.

Because the combination of O'Keefe with Decker and Ahjopalo is not expected to succeed in the alleged combination, it cannot render the instant claims obvious.

Ahjopalo fails to disclose any asymmetrically substituted aromatic polyacid, ester, acid halide, anhydride, or a mixture thereof, as instantly recited. Accordingly, Ahjopalo fails to make up for the deficiencies of O'Keefe or of O'Keefe in view of Decker. See Royka, supra.

The rejections over O'Keefe in view of Decker and further in view of Ahjopalo or of O'Keefe in view of Ahjopalo or of Decker in view of Ahjopalo are improper and should be withdrawn.

C. Regarding the rejection of instant claims 5 and 6 as obvious under 35 USC §103(a) over O'Keefe in view of Decker and further in view of Daly et al.

Daly fails to disclose semi-crystalline polyesters and fails to overcome the deficiencies of O'Keefe or of O'Keefe in view of Decker

Daly fails to disclose any semi-crystalline polyester, as instantly recited. Accordingly, Daly fails to make up for any of the deficiencies of either Decker or O'Keefe. Further, because the combination of O'Keefe and Decker is improper,

O'Keefe. Further, because the combination of O'Keefe and Decker is improper, as discussed above, the combination of O'Keefe and Decker with Daly is also improper.

Appellant respectfully requests the reversal of the rejections, and allowance of the instant claims and to take any other actions it deems necessary in the exercise of diligent and compact prosecution.

#### CONCLUSION

Based on the foregoing, Appellant respectfully submits that the instant claims are currently in condition for allowance and that all of instant claims 1-2 and 4-10 be rejoined. Appellant respectfully requests the Board to pass the instant claims to allowance.

The instant arguments rely on no evidence not made of record in the rejection, as cited above.

Enclosed herewith, Appellants have filed a Certificate of Mailing to establish the timely filing of the instant Appeal Brief.

The Commissioner is hereby authorized to charge any additional fee which may be required, or to credit any overpayments to Deposit Account 18-1850.

Respectfully submitted,



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## CLAIMS APPENDIX

1. (previously presented) A coating powder, comprising:
  - a polyester resin composition comprising:
    - an amorphous carboxylic acid functional polyester resin in an amount of 75 to 90 parts per hundred parts by weight of the total polyester resin composition, and
    - a semi-crystalline polyester resin in an amount of 10 to 25 parts per hundred parts by weight of the total polyester resin composition, wherein the said semicrystalline resin is formed from a polyol and a polycarboxylic acid such that the polycarboxylic acid comprises 10 to 50 phr of the total weight of total polycarboxylic acid used to form the said semi-crystalline polyester is an asymmetrically substituted aromatic polyacid, ester, acid halide, anhydride, or a mixture thereof, and, further, wherein the semi-crystalline polyester resin provides the coating powder with a total cure time of 5 to 20 minutes;
  - an epoxy-functional curing agent; and
  - a catalyst.
2. (original) The coating powder of claim 1, wherein the amorphous resin is non-blooming.
3. (canceled).
4. (original) The coating powder of claim 1, wherein the epoxy-functional curing agent is TGIC.
5. (original) The coating powder of Claim 1, wherein the catalyst is a tetra-substituted ammonium halide salt, a tetra-substituted phosphonium halide salt a tetra-substituted phosphonium tetra-substituted borate salt, a tetra-substituted arsonium tetra-substituted borate salt, a tetra-substituted ammonium tetra-

substituted borate salt, an imidazole tetra-substituted borate salt, or a mixture comprising at least one of the foregoing salts.

6. (previously presented) A coating powder, comprising:
  - a polyester resin composition comprising:
    - an amorphous carboxylic acid functional polyester resin in an amount of 75 to 90 parts per hundred parts by weight of the total polyester resin composition, and
    - a semi-crystalline polyester resin in an amount of 10 to 25 parts per hundred parts by weight of the total polyester resin composition, wherein the semicrystalline resin is formed from a polyol and a polycarboxylic acid, wherein the polycarboxylic acid comprises 10 to 50 phr of the total weight of total polycarboxylic acid used to form the said semi-crystalline polyester of an asymmetrically substituted aromatic polyacid or derivative thereof;
  - triglycidyl isocyanurate; and
  - tetraethyl phosphonium tetrafluoroborate in an amount of 0.1 to 5 parts per hundred parts of total resin by weight.

7. (withdrawn) A method for coating an article, comprising:

contacting the article with a particulate coating powder to form a powder coating layer, wherein the particulate coating powder comprises a polyester resin comprising an amorphous carboxylic acid functional polyester resin in an amount of 75 to 90 parts per hundred parts by weight of the total polyester resin composition, and a semi-crystalline polyester resin in an amount of 10 to 25 parts per hundred parts by weight of the total polyester resin composition, wherein the said semicrystalline resin is formed from a polyol and a polycarboxylic acid such that the polycarboxylic acid comprises 10 to 50 phr of the total weight of total polycarboxylic acid used to form the said semi-crystalline polyester is an asymmetrically substituted aromatic polyacid, ester, acid halide, anhydride, or a mixture thereof, and, further, wherein the semi-crystalline polyester resin provides the coating powder with a total cure time of 5 to 20 minutes, an epoxy-functional compound, and a catalyst;

fusing the coating powder layer to form a powder coating; and

curing the powder coating at a temperature and for a time effective to form a smooth coating.

8. (withdrawn) The method of Claim 7, wherein fusing and curing is at a temperature of 200 to 350°F.

9. (withdrawn) The method of Claim 7, wherein contacting is by electrostatic spraying, corona-discharge, tribocharging, fluidized bed, or a combination thereof.

10. (withdrawn) The method of Claim 7, wherein the article comprises a substrate selected from the group consisting of wood, hardwood, hard board, laminated bamboo, wood composites, particle board, electrically conductive particle board, high density fiber board, medium density fiber board, low density fiber board, masonite board, laminated bamboo, acrylonitrile butadiene styrene copolymers, polyphenylene oxide copolymers, sheet molded components, polyolefins, polycarbonates, acrylics, nylons paper, cardboard, metal, glass, steel, ceramic, carbon, graphite and combinations thereof.

11. (canceled).

## **EVIDENCE APPENDIX**

None

## **RELATED PROCEEDINGS APPENDIX**

None